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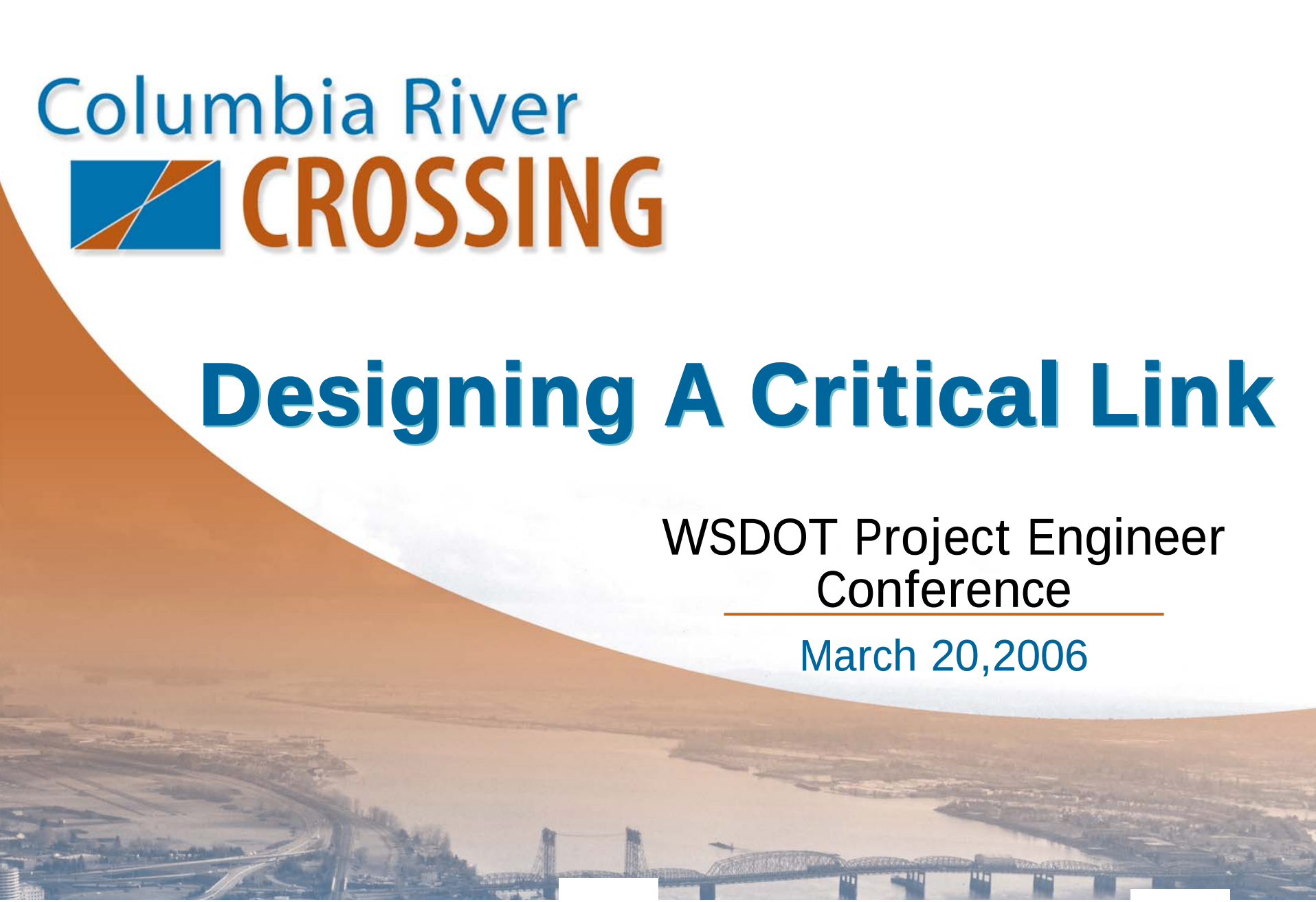
# Designing A Critical Link

WSDOT Project Engineer Conference

March 20,2006



# Presentation Outline

- Conception of the Project
- Function and role of the I-5 Crossing
- Need for the Columbia River Crossing project
- Process
- Design Challenges
- Schedule of the project
- Questions

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# CONCEPTION

# Conception

- History of regional and corridor studies
  - Several studies in the last 20 years
- Multi-modal planning in the I-5 corridor
  - I-5 Trade Corridor Study(1999)
  - I-5 Transportation and Trade Partnership(2002)

# Recommendations from the 2002 Partnership Study:

- Provide for high capacity transit linking Portland and Clark County
- Improve I-5 by addressing bottlenecks at:
  - 99th Street to I-205, Clark County
  - Delta Park to Lombard, Portland
  - Columbia River Crossing and related interchanges (SR-500 to Columbia Boulevard)

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# FUNCTION AND ROLE

# I-5 Bridge

- 2 side-by-side bridges
- Eastern (northbound) built in 1917
- Western (southbound) built in 1958
- 3 lanes each
- 135,000 vehicles per day

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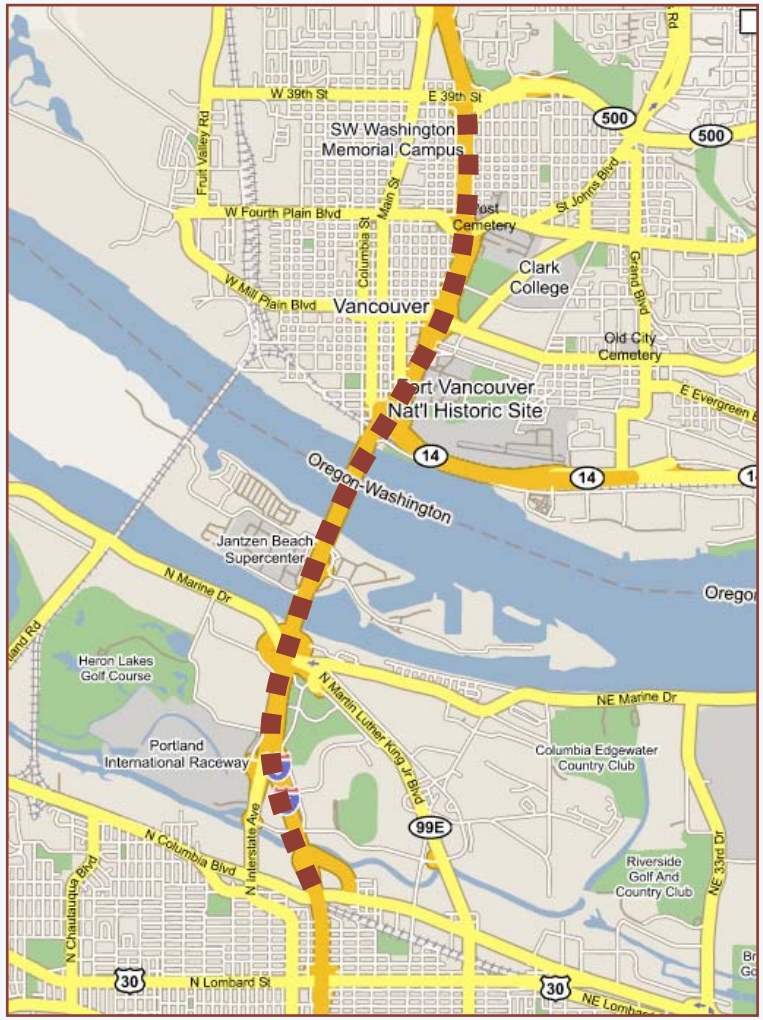
# Function and Role of the I-5 Bridge Influence Area

- Connects Washington and Oregon
- Connects with 4 state highways and 5 major arterial roadways
- Provides access to variety of land uses

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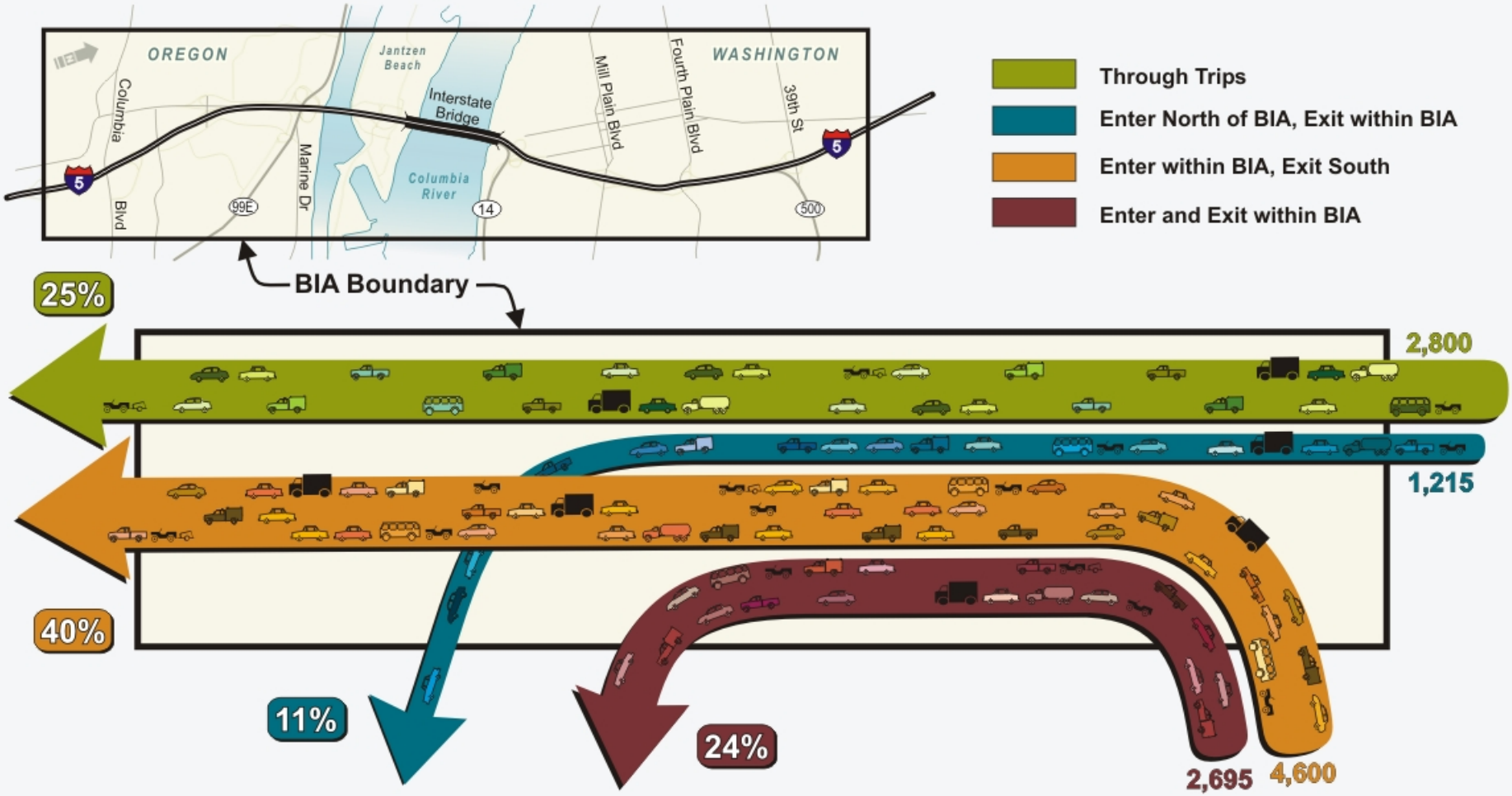
# Southbound Vehicle Trips within BIA (2005)



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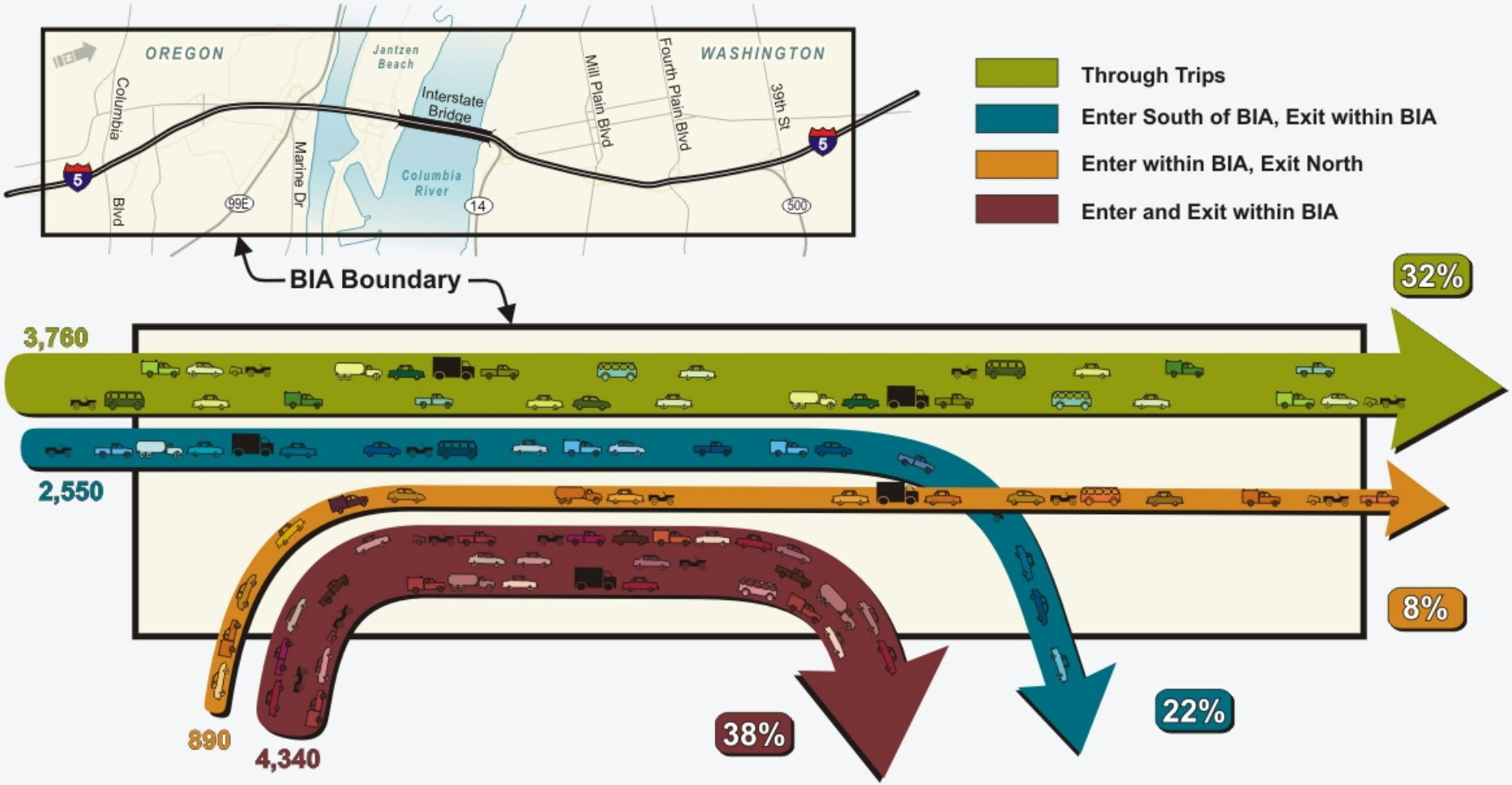


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# Need For The Project


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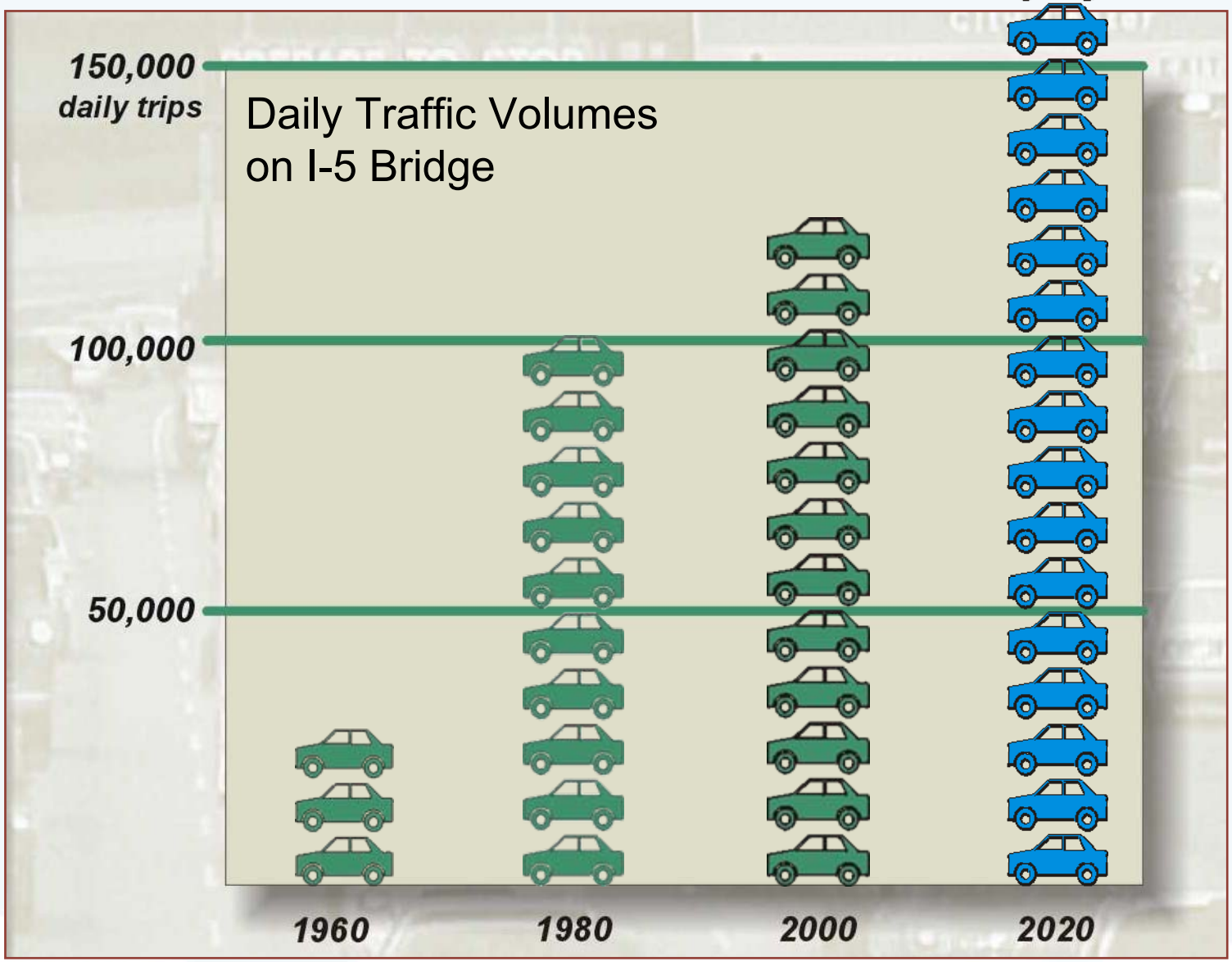
# Travel demand exceeds capacity

- Causing heavy congestion and delay during peak travel periods for automobile, transit, and freight traffic
- Limiting mobility within the region and impedes access to major activity centers.

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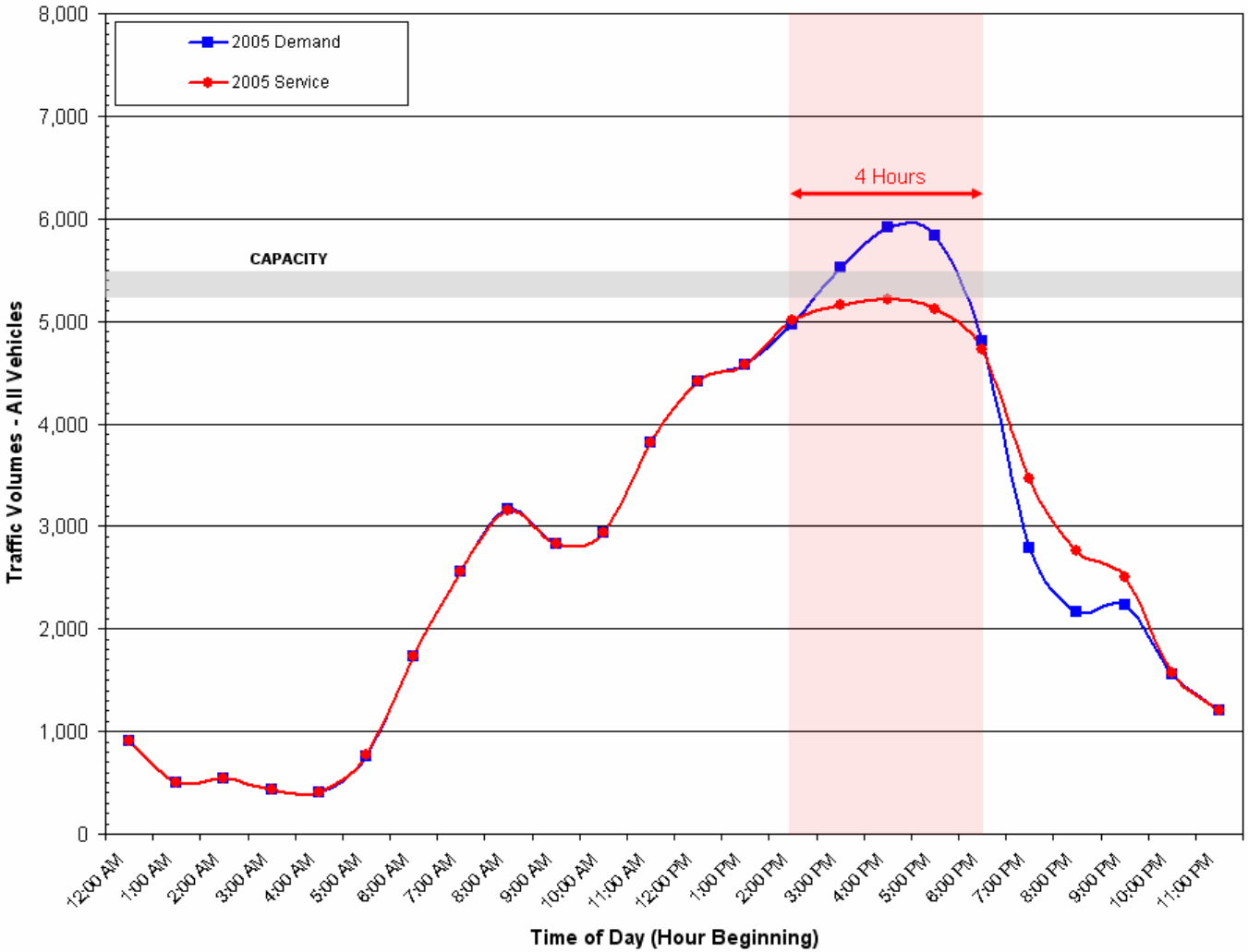
# Northbound I-5 Volume Across Interstate Bridge (2005)

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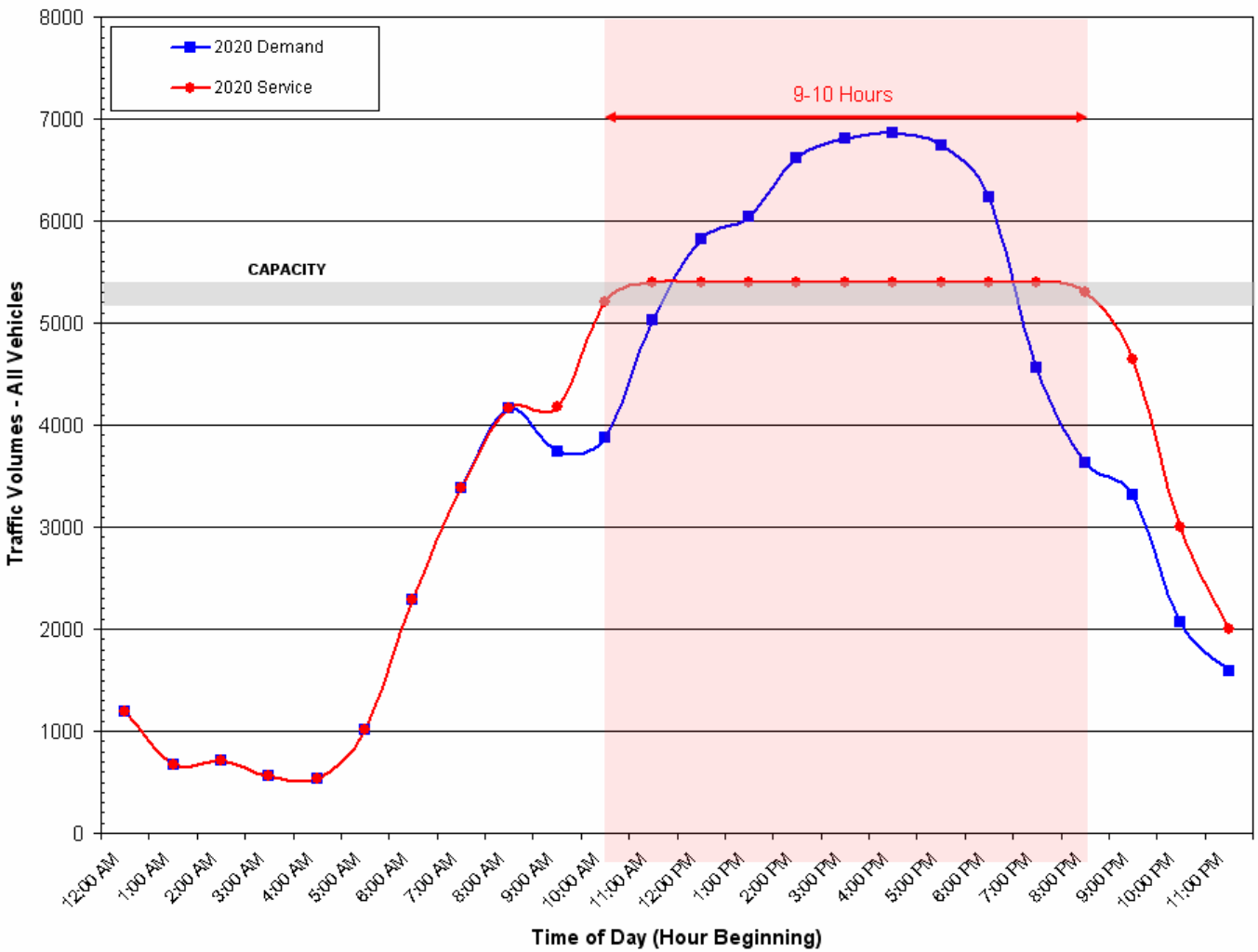
# Northbound I-5 Volume Across Interstate Bridge (2020)

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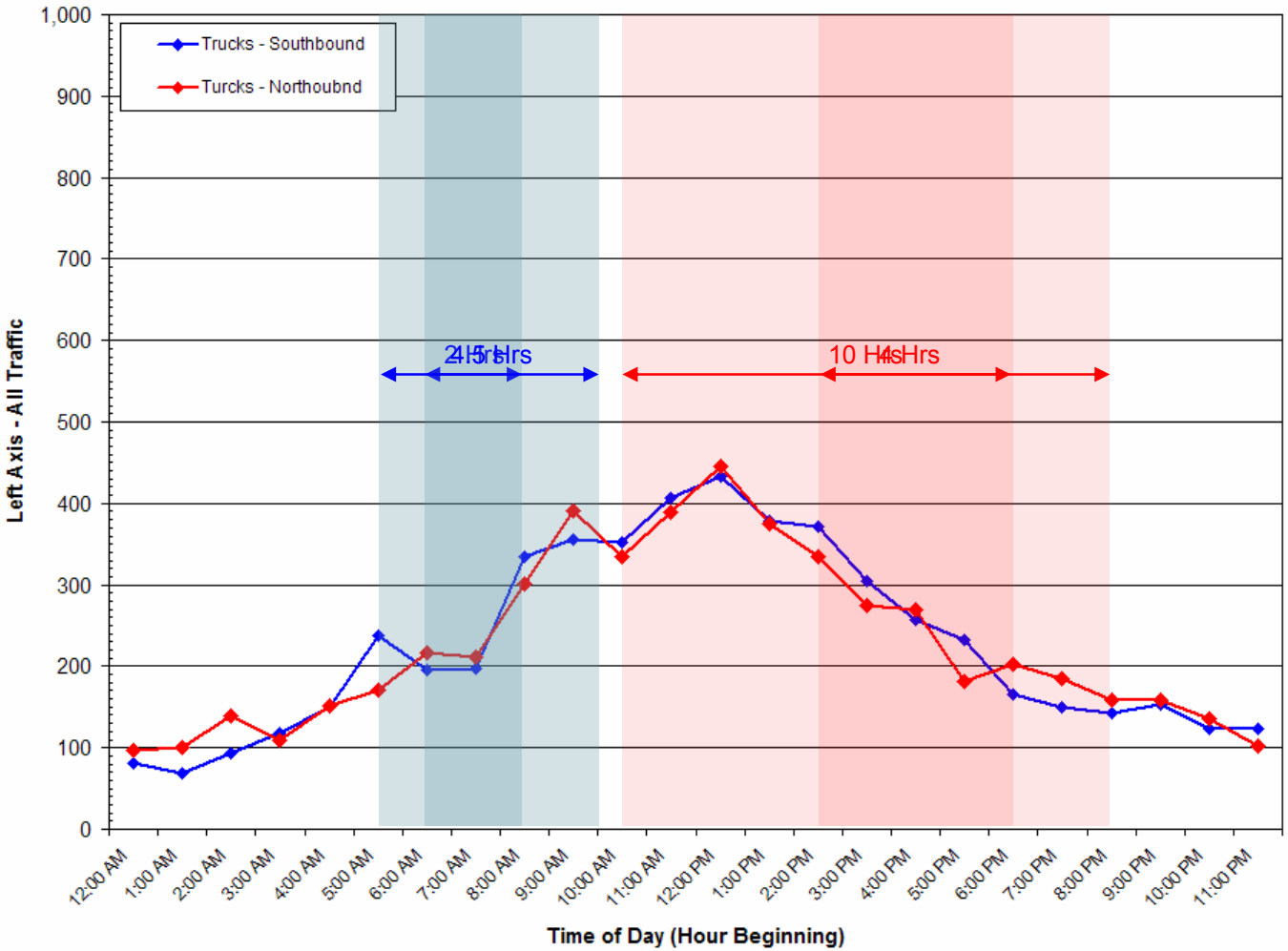
# I-5 Truck Volumes and Congestion Spreading

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# Safety

The I-5 bridge area and its approaches experience crash rates over two times higher than statewide averages for comparable urban freeways in Washington and Oregon, largely due to outdated design.

Incident evaluations attribute crashes to congestion, closely spaced interchanges, short weave and merge sections, vertical grade changes in the bridge span, and narrow shoulders.

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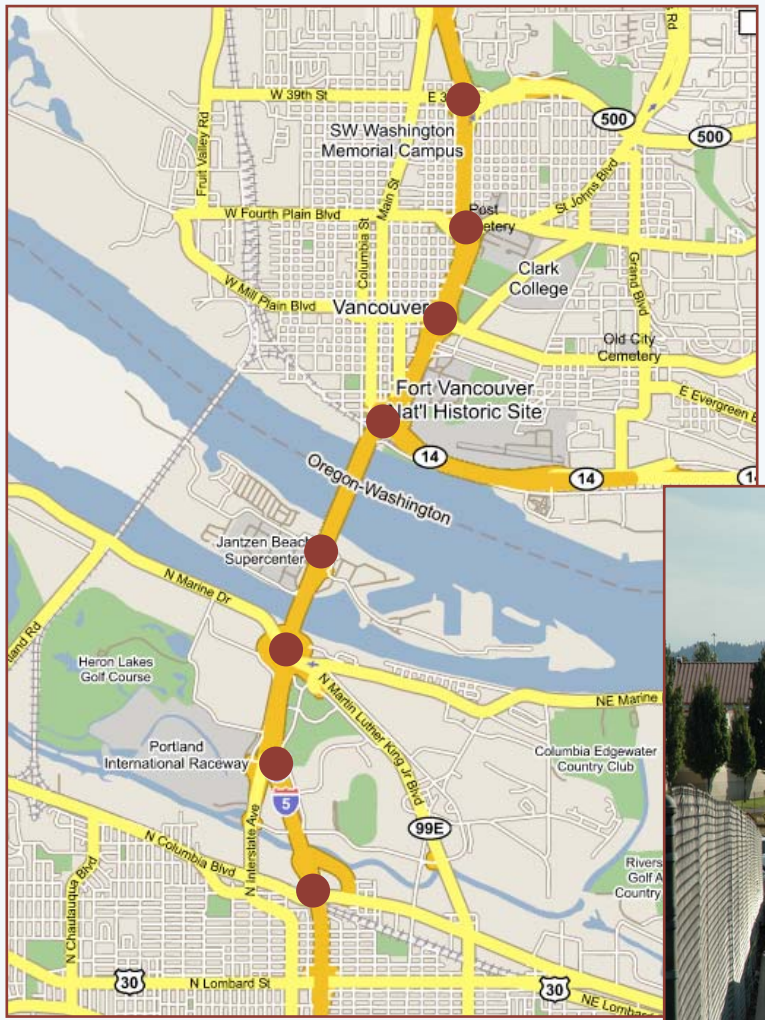


Average Interchange Spacing = 0.5 miles

Minimum standard spacing = 1.0 mile

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# Bicycle and Pedestrian Facilities

Facilities for crossing the Columbia River are not designed to promote non-motorized access and connectivity across the river.


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## Seismic

The bridges do not meet current seismic standards, leaving them vulnerable to failure in an earthquake.

## Connectivity

The current I-5 configuration within the Bridge Influence Area limits east-west connectivity across the highway for all users.

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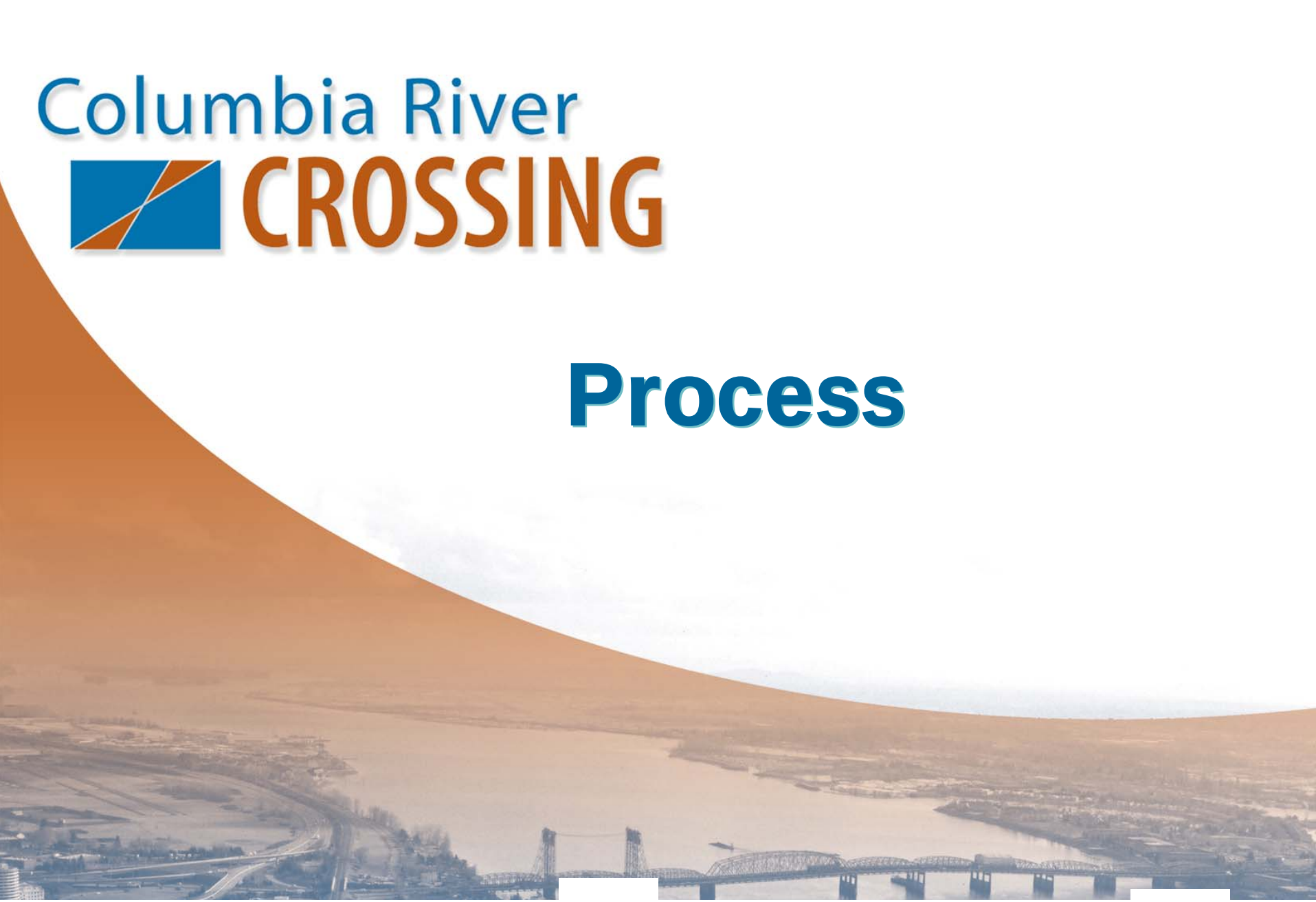
# Process



# Process

- Project Development Team
- Working Groups
- Regional Partners
- Task Force
- Project Sponsors Council
- InterCEP
  (Interagency Collaborative Environmental Process)
- FTA/FHWA

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# Project Development Team

- Day-to-day responsibility for project delivery
- Comprised of agency staff and consultant team

## Assistance from Working Groups

- Economic Development
- Freight
- Environmental Analysis (with subgroups)
- Engineering (with subgroups)
- Transportation Modeling
- Project Finance
- Communications
- Environmental Justice

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# Regional Partners

- Advises and assists PDT in project delivery
- Senior staff from:
  - FHWA and FTA
  - DOTs
  - Metro and RTC
  - TriMet and C-TRAN
  - Ports of Portland and Vancouver
  - Cities of Vancouver and Portland
  - Multnomah and Clark Counties

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# Task Force

- Advisory role to the project team
- 39 members – representatives from broad cross section of Oregon and Washington communities
  - Public agencies
  - Businesses
  - Civic organizations
  - Neighborhoods
  - Freight groups
  - Commuter groups
  - Environmental groups

# Project Sponsors Council

- Local Advisory Body for Project
- Members
  - DOTs
  - Metro and RTC
  - TriMet and C-TRAN
  - Cities of Portland and Vancouver

# Interagency Collaborative Environmental Process (InterCEP)

- Coordinates and collaborates to streamline regulatory reviews and permitting. Group includes federal, state, and local agencies responsible for protecting air, water, wildlife, and cultural resources.

# Federal Highway Administration / Federal Transit Administration

- Co-Lead Federal Agencies
- Issue DEIS and FEIS
- Sign Record of Decision

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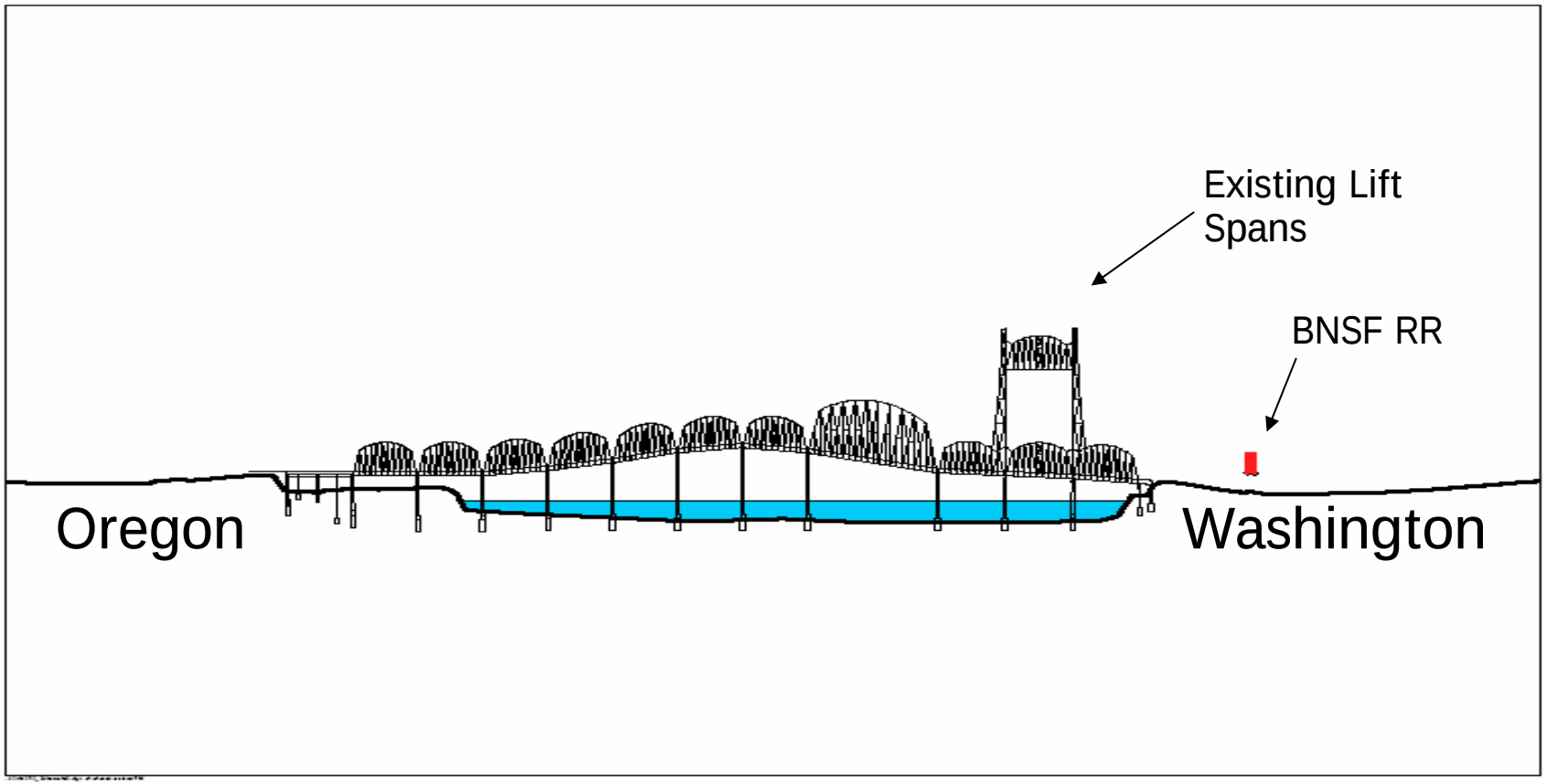
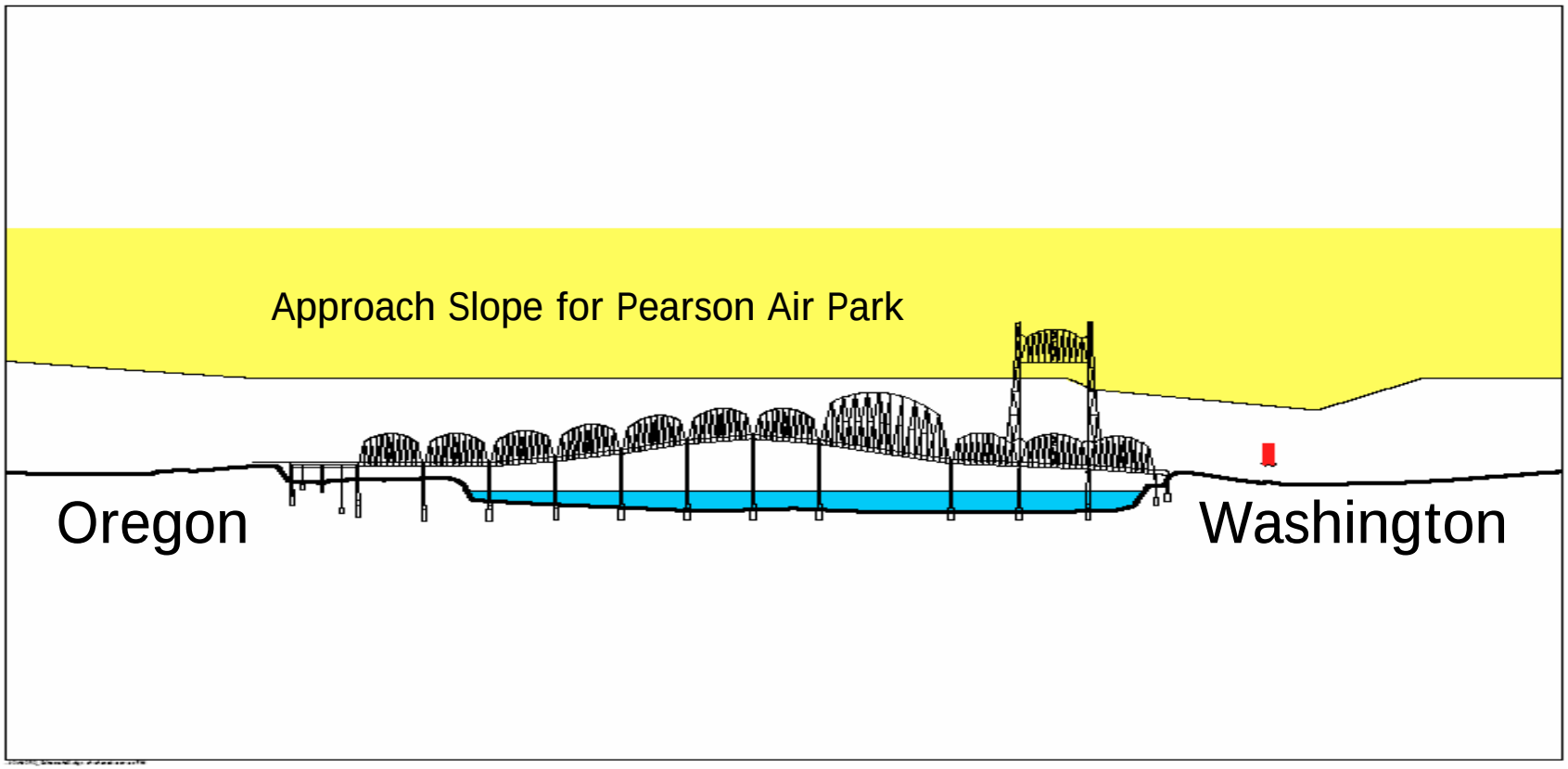
# Design Challenges

# Air and Marine Navigation

## Vertical Constraints



# Air and Marine Navigation
## Vertical Constraints



# Air and Marine Navigation

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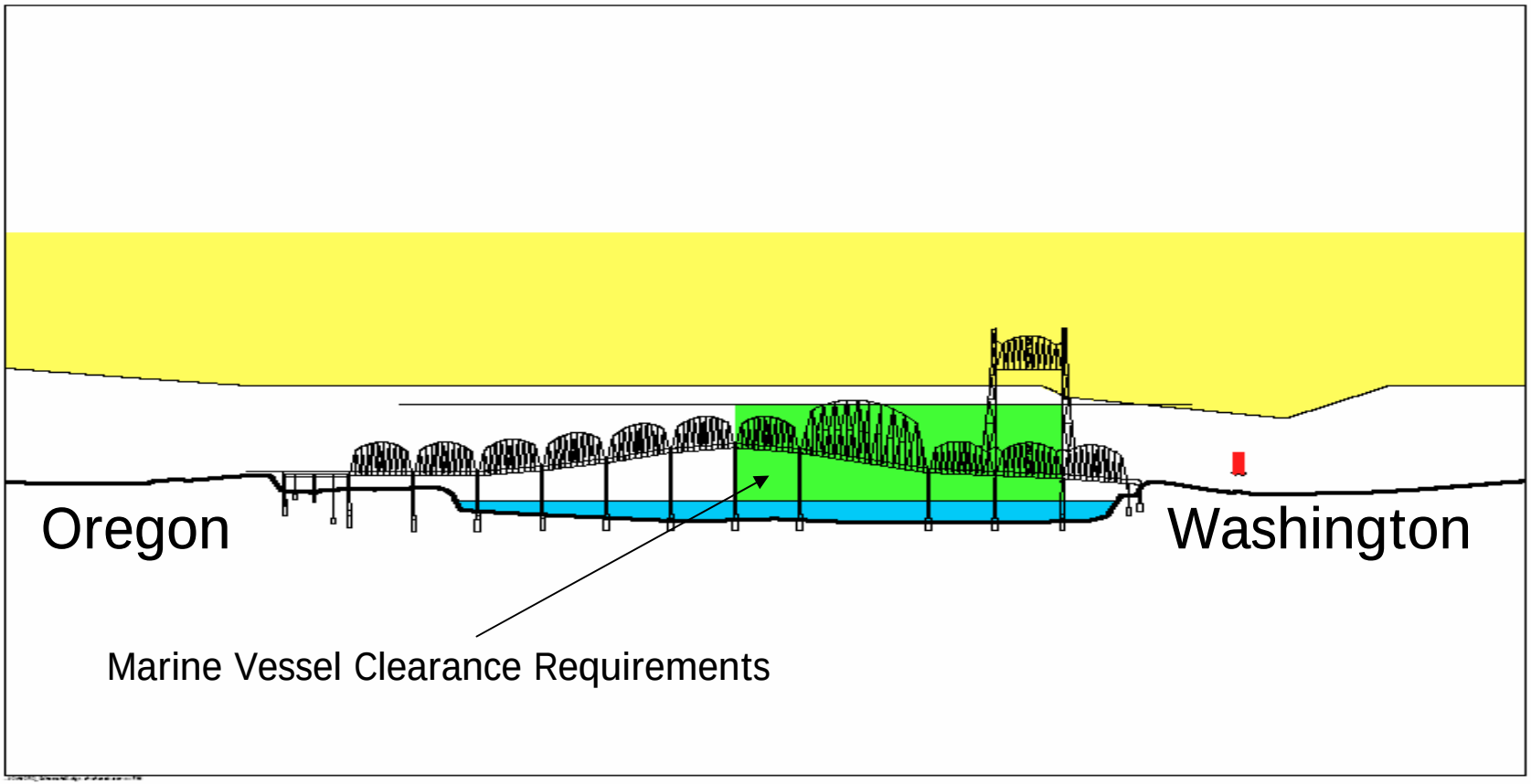
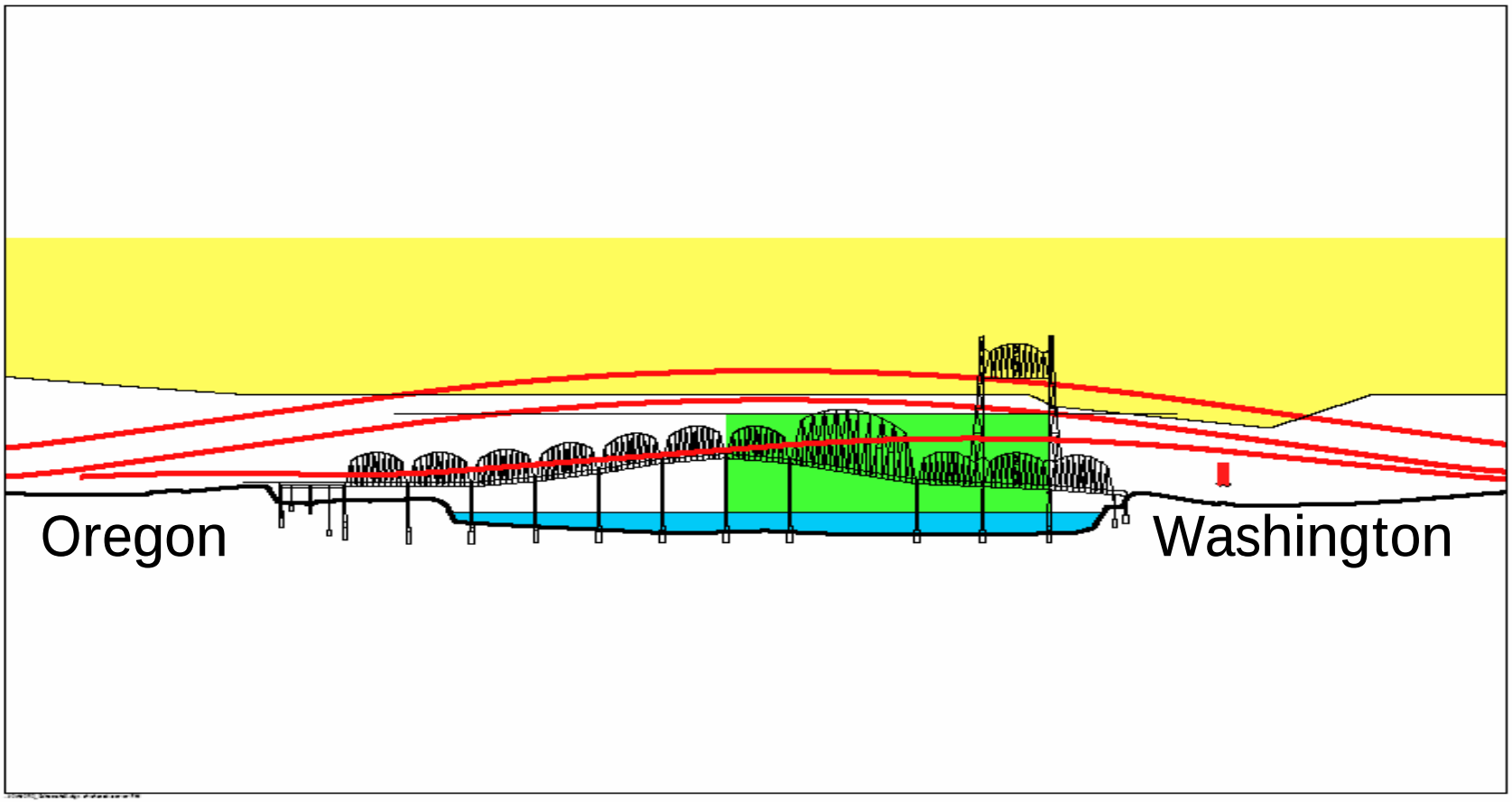


# Air and Marine Navigation

## Vertical Constraints

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# Proximity of rail bridge to the I-5 Bridges


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# Project Area Resources



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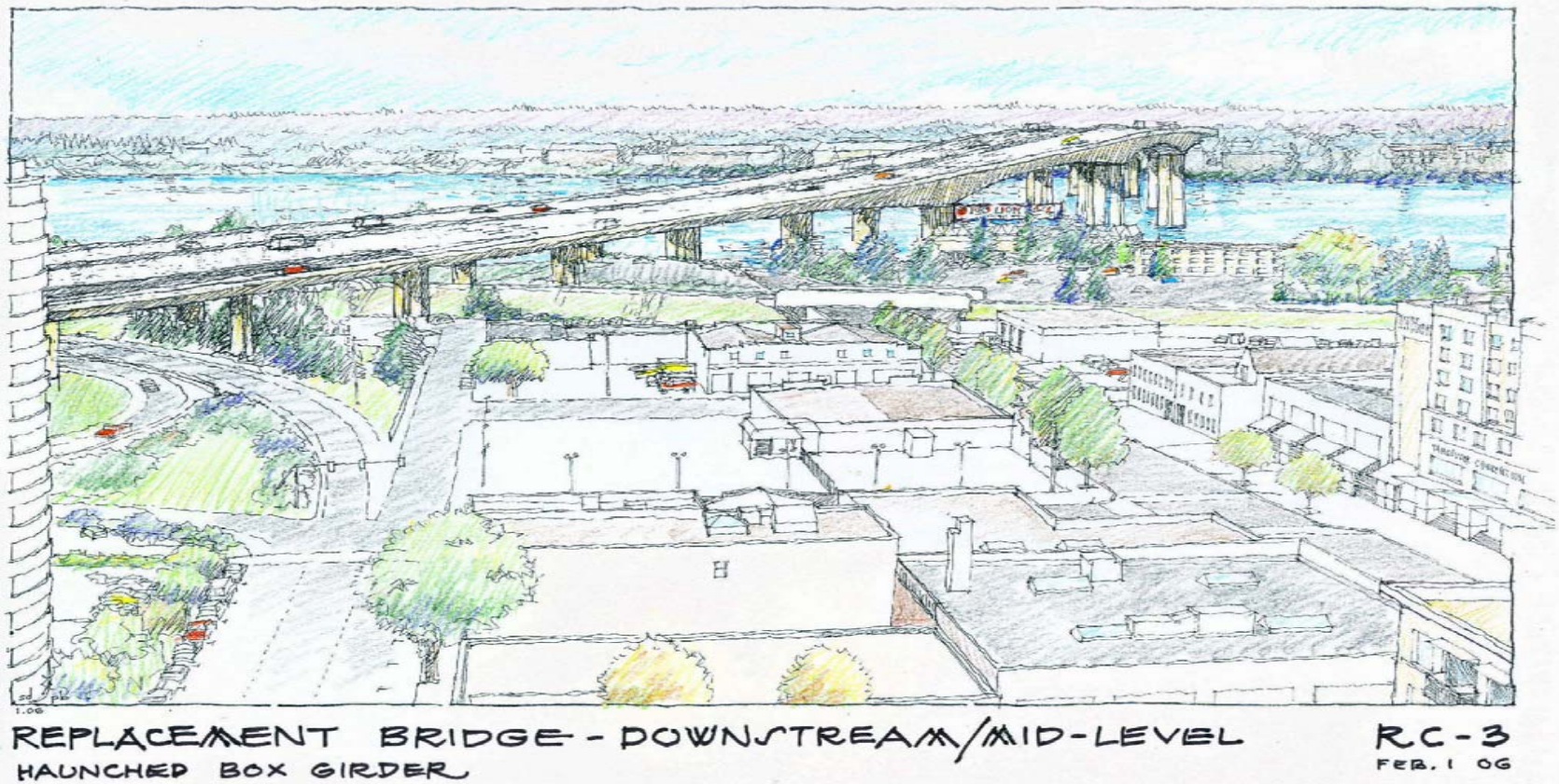
# Preliminary River Crossing Component



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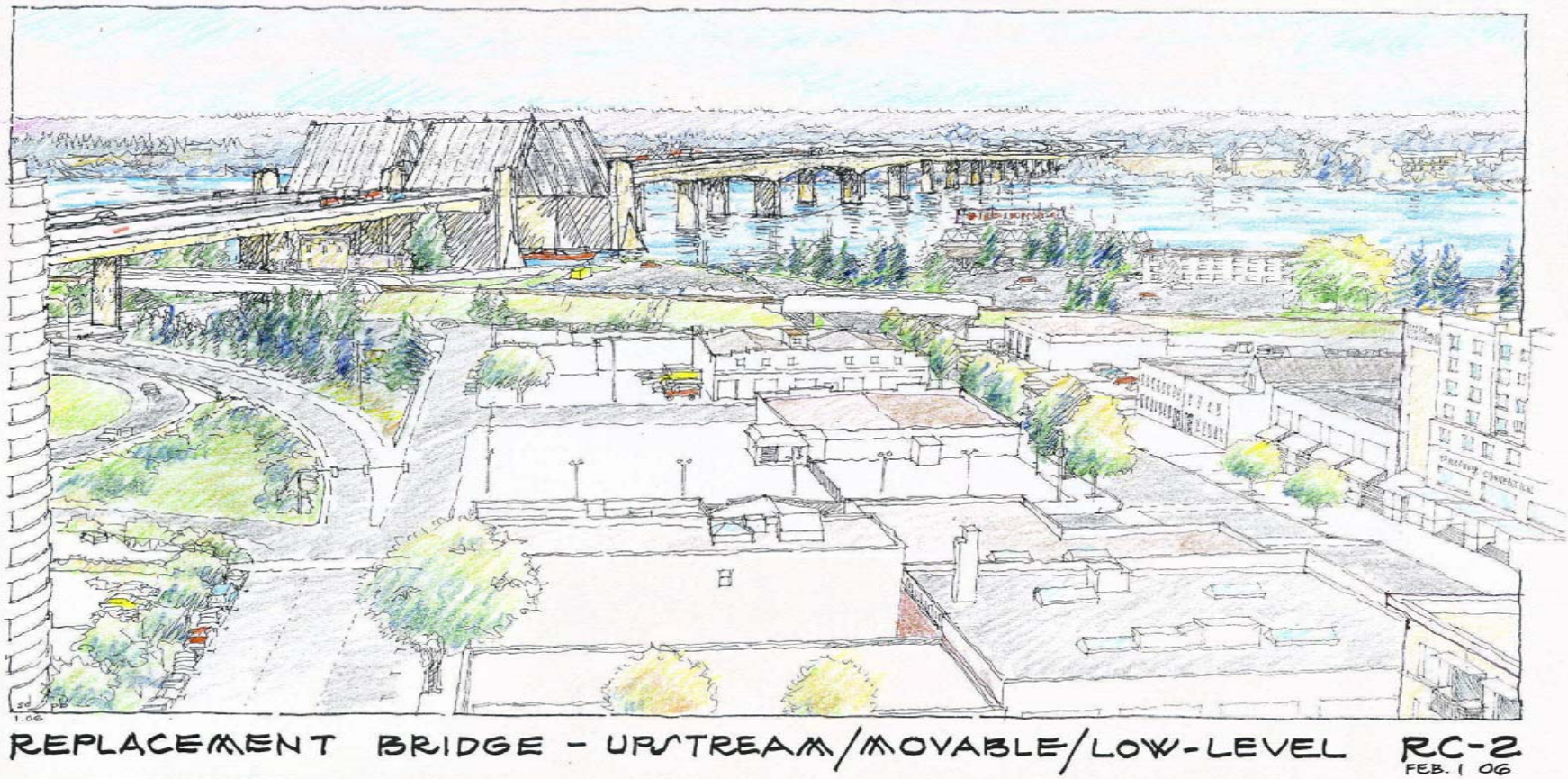


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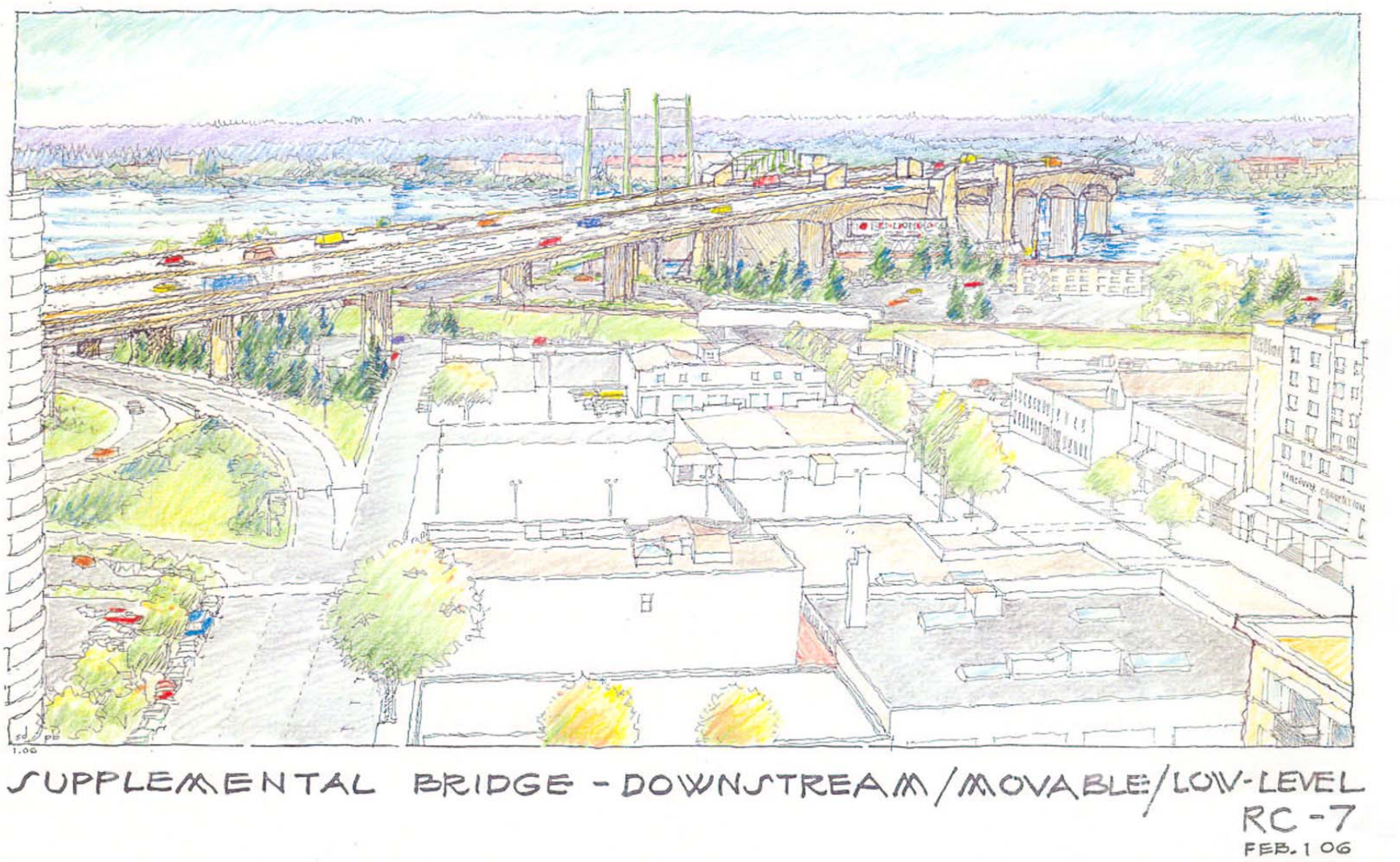
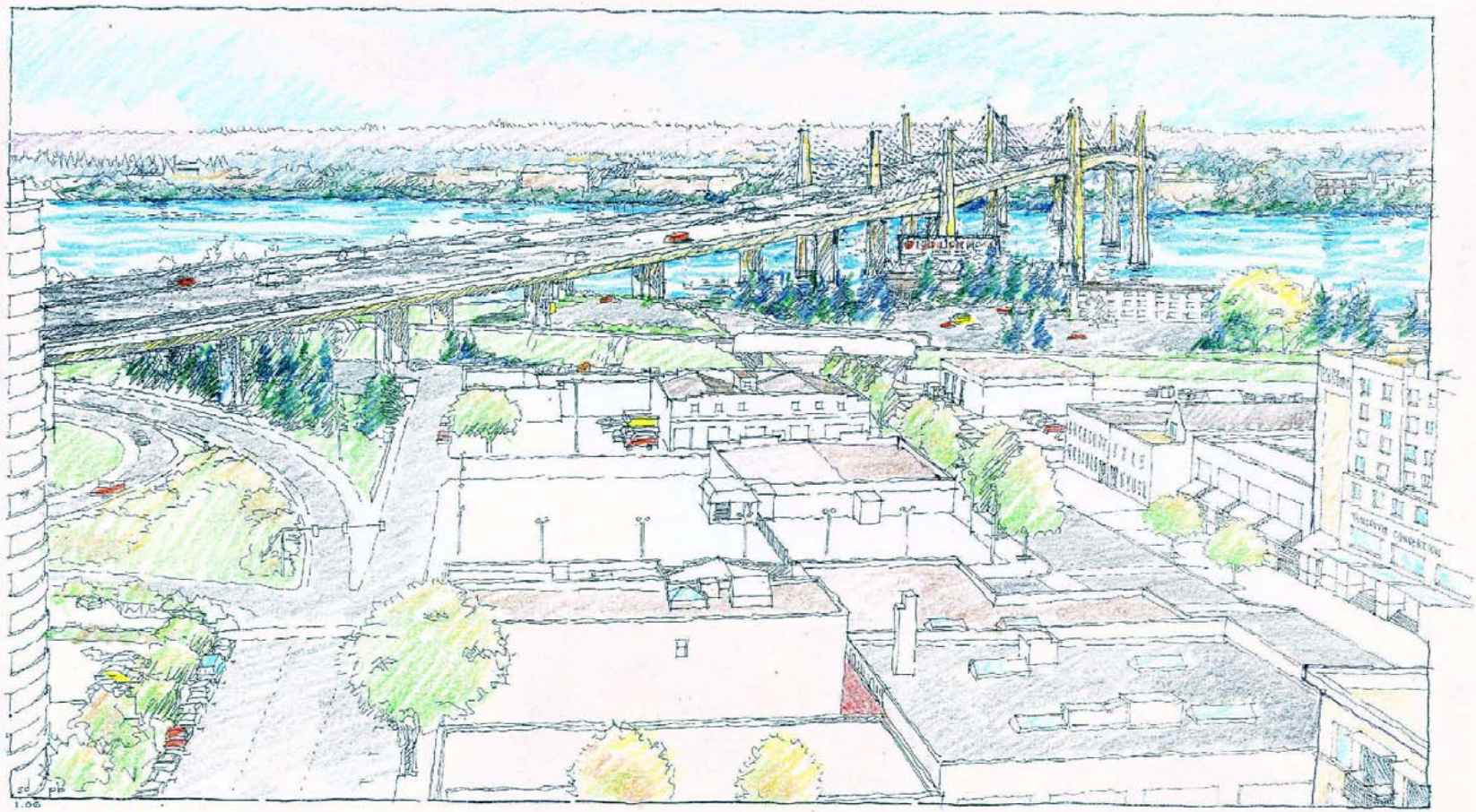
# Preliminary River Crossing Component





REPLACEMENT BRIDGE - DOWNSTREAM/MID-LEVEL
EXTRADOSED GIRDER

RC-3
FEB. 1 06

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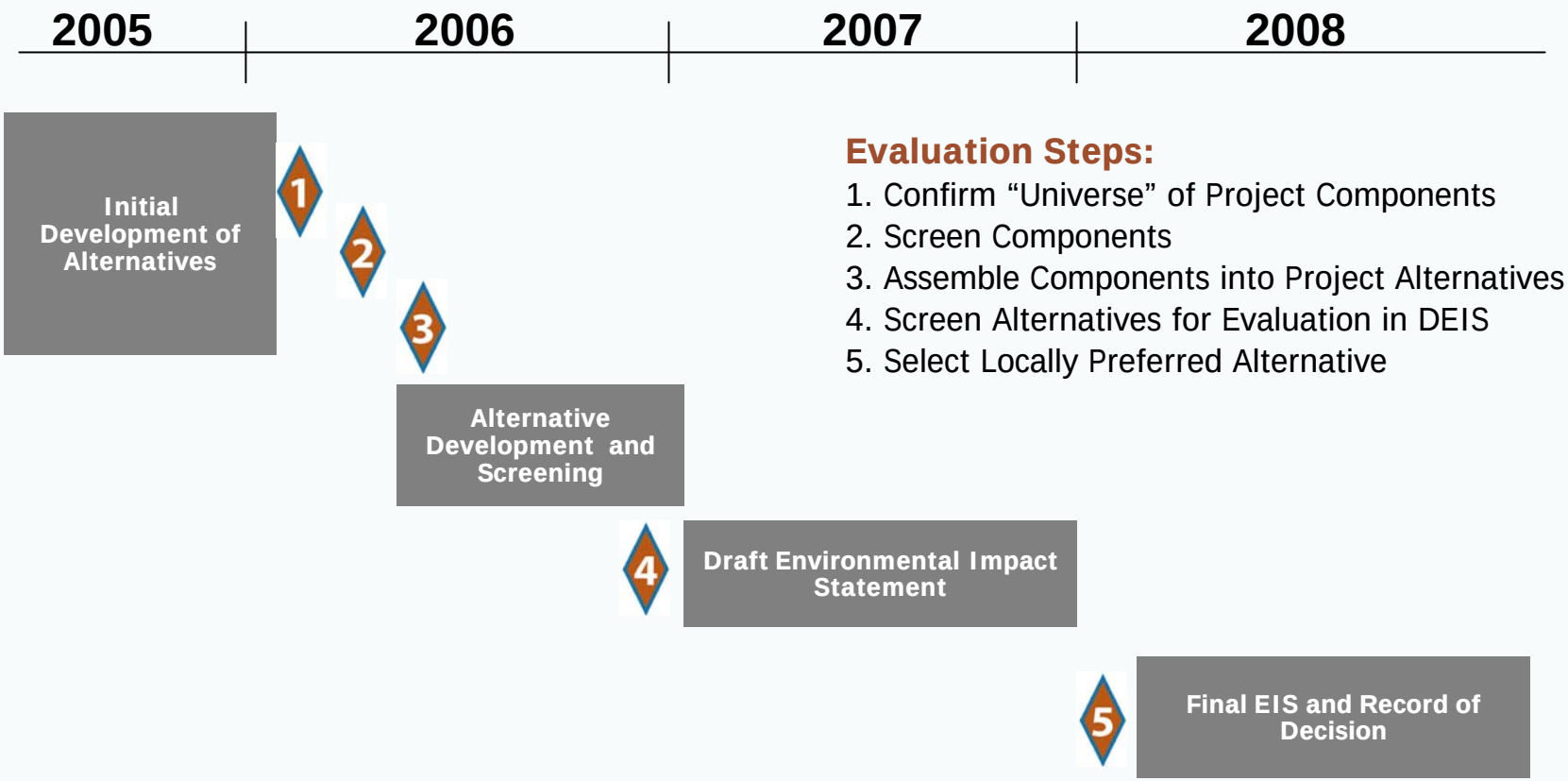
# EIS Process and Schedule




**Evaluation Steps:**

1. Confirm "Universe" of Project Components
2. Screen Components
3. Assemble Components into Project Alternatives
4. Screen Alternatives for Evaluation in DEIS
5. Select Locally Preferred Alternative

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